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When and why frail elderly people give up independent living: The Netherlands as an example

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ABSTRACT
As yet the determinants of the need for nursing homes and old age homes are not clearly understood. This may be due to the fact that care facilities providing different levels of care may yield different predictors of use. Moreover, the absence of theory and ignorance of the problems with 'use' as the dependent variable, may be responsible for this. In this study these issues are addressed explicitly. The study focuses on the need for living in an old age home and a theoretical model predicts under what circumstances frail elderly people will express the need for living in such a home. Findings show that, as hypothesised, loss of comfort and affection are among the main predictors of a strong orientation towards living in an old age home. Resources to counter the loss of comfort and affection – a spouse, income, home adaptations, private help, informal and formal home care – were only partly effective in their hypothesised function of deterring orientation towards living in an old age home. Pressure from others to apply for an old age home had the strongest effect. The findings are discussed and some implications for policy are considered.

KEY WORDS – old age homes, frail elderly people, SPF theory..

Introduction

At a time when there is a growing percentage of frail elderly people in our society, it becomes ever more urgent to understand when and why they might give up independent living and apply for long-term care in old age homes or nursing homes (Doty 1992; McConnel 1984; Murtaugh *et al.* 1990). The literature shows that there is as yet no consistent picture concerning the determinants of the need for such care among frail elderly people (Branch 1984; Branch and Jette 1982; Greene and Ondrich 1990; Hanley *et al.* 1990; Jette *et al.* 1992; Newman *et al.* 1990; Palmore 1976; Shapiro and Tate 1988; Tobin and

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Lieberman 1976; Vicente *et al.* 1979; Wolinsky *et al.* 1992). 'An intriguing finding of research on the risk of institutionalization is that individuals along the full impairment continuum, ranging from moderate to completely bedridden, live in nursing homes and in the community.' (Newman *et al.* 1990:173)

Impairment is found to be a necessary but not a sufficient condition. Other factors such as age, gender, living alone, and the absence of informal care are found to have an influence, but the impact varies and it is as yet unclear how these factors interrelate. It has also been found that members of formal and informal networks play an important role in the process of application and admission to care facilities, but the results are still mixed (Bass and Noelker 1987; Deimling and Poulshock 1985; Jette *et al.* 1995; McAuley and Travis 1997; McFall and Miller 1992; Montgomery and Kosloski 1994; Newman *et al.* 1990; Smallegan 1985; Tobin and Kulys 1981).

Several reasons may exist for stagnation in the field. First, it may be that the different levels of care given in different institutions (residential, intermediate, or skilled care) yield different factors as predictors of use. For instance, the need for skilled care in nursing homes may be largely explained by severe physical or cognitive impairment, whereas the determinants of use of residential or intermediate care are much less clearly understood. Second, there is very little theory concerning possible factors constituting the underlying mechanisms leading up to the use of care facilities (George and Maddox 1989; Wolinsky *et al.* 1992). Most studies focus on identifying risk factors for institutionalisation, but it remains uncertain if and why the identified *antecedents* should also be considered *determinants* of institutionalisation. A third and related reason may be that most studies focus primarily on the explanation of the *use* of or *demand* for institutional care, but both dependent variables seem to involve some problems, and a clear understanding of the determinants of institutionalisation is consequently hampered. On the one hand, looking solely at 'use' disregards the people who seek institutional care but who fail to fulfil the admission criteria. The characteristics of these people, however, may be essential to (part of) an explanation of the need for a certain care facility. On the other hand, focusing on 'demand' (*i.e.* looking at applicants who are on a waiting list for admission), is also problematic, as it is found that people apply as a precaution, or because others have encouraged them to do so, not because they are willing to accept a place when offered one. In a Dutch study it was found that 60 per cent of the applicants of old age homes reported that they would not accept a place at the moment, whereas

25 per cent said they would never accept a place in such a home (Penris and Steenbergen 1992). In this paper, it is argued that stagnation in the field may also be partly caused by ambiguity regarding the dependent variables 'use' and 'demand'. Therefore, an alternative measure of need for living in an old age home is suggested.

The aims of the paper are threefold. First, this study focuses on the use of old age homes (*i.e.* residential and intermediate care facilities), rather than skilled care facilities (*i.e.* nursing homes). In the Netherlands two broad categories of long-term care facilities for the elderly are distinguished: nursing homes, and old age homes (the translation of the Dutch term would be 'caring homes'). Elderly persons living in the first category of care facilities are physically and/or mentally ill and need special medical and nursing care. Older persons living in the second category of facilities do not need this special type of care, but only help with activities of daily living. Although these homes used to provide residential care rather than intermediate care, over recent decades the average level of disability among residents has increased. Consequently, they have increasingly catered for intermediate but not nursing home care. In this paper, we will focus on these residential and intermediate care facilities, which will be referred to as 'old age homes'.

Second, we aim to obtain a better grasp of the concept of need for living in an old age home, in order to attain a clearer indication of what this entails. For this, the concept of 'orientation towards living in an old age home' is chosen. This concept had been suggested and investigated in an earlier study in the Netherlands (Coolen and Duipmans 1987), in which it was found that 'subjective orientation' was a better predictor of later use of old age homes than having applied and being on the waiting list for admission to such an institution. A scale to measure 'orientation towards living in an old age home' has been developed and tested in a pilot study (Steverink 1996). In order to avoid a mere attitudinal measure, orientation was assessed as much as possible as 'revealed' orientation. This is important, as concrete behaviour is found to have more predictive power than attitudes. The measure of revealed orientation was constructed by formulating items reflecting concrete behaviour that showed interest in an eventual move to an old age home. However, as it was hard to find several different concrete forms of behaviour, it was decided also to add a number of questions about how close or far in the future the frail elderly person considered institutionalisation to be likely. The scale will be described in detail in the section on method.

The third aim of this paper is to formulate a theoretical model to

explain orientation towards living in an old age home, and to test its hypotheses empirically. The theoretical model should explain why and under which circumstances differences in orientation towards living in an old age home emerge in frail elderly people. One of the circumstances that has to be considered in such a model is the possible pressure of others in the social network. The model will be explained in the next section. Some further remarks are required at this point. First, as revealed orientation can only be measured before people have moved to an old age home, orientation towards living in an old age home will be assessed in elderly persons who are still living independently in the community. However, the final test of whether, and to what extent, a strong orientation is indeed predictive for actual use later on, can only be carried out in a longitudinal design, one which, moreover, covers a long enough period of time to reveal this relationship. Nevertheless, as the focus of this paper is on the introduction of the concept of orientation towards living in an old age home, and on the clarification and first empirical test of a theoretical model to explain orientation, it would seem acceptable to present cross-sectional data. Second, the empirical test will focus on physically frail elderly persons, as it is known that impairment is a necessary, although not sufficient, condition for older people to consider living in a care facility. In the section on method, the selection of frail elderly people will be elucidated.

Theoretical elaboration

In this study the theory of social production functions (SPF) was chosen as the frame of reference for our inquiry (Lindenberg 1996). This theory incorporates individual behaviour (as well as goals) and circumstances in terms of resources and constraints. For this reason, it would seem to be useful in working out the aims of this paper and in contributing to the research field at hand. Elsewhere, the theory and its various applications have been presented in considerable detail (Lindenberg 1996; Ormel *et al.* 1997; Nieboer 1997; Steverink 1996; Steverink *et al.* 1998; VanEijk 1997). Here the outline will only be sketched in order to concentrate on the empirical test. The basic framework of the theory is formulated in general terms. The general part will be elucidated first, the theory being subsequently applied to the research question under consideration.

The fundamental assumption of the theory of SPF is that people have goals, which they attempt to reach by actively 'producing' the

necessary means, given ever-changing resources and constraints. Goals are assumed to be both universal and instrumental. The universal goals are physical and social wellbeing. It is assumed that every individual ultimately strives for these two goals, by realising lower-order (instrumental) goals. There is thus a hierarchy of goals, with universal goals at the top and layers of instrumental goals below. For each universal goal the theory also specifies a number of first-order instrumental goals. Second-order and third-order instrumental goals are worked out in terms of resources for first-order goals.

The five first-order instrumental goals specified by the theory are as follows: *stimulation* (*i.e.* a pleasant range of physical or mental 'activation') and *comfort* (*i.e.* satisfaction of basic needs and absence of need or pain) are the means of reaching physical wellbeing; *status* (*i.e.* being recognised by others and oneself as better than others in some relevant dimension); *behavioural confirmation* (*i.e.* doing things right in the eyes of others and oneself) and *affection* (*i.e.* being loved as a person by others and oneself) are the means of producing social well-being. Given that individuals are active producers of means (instrumental goals) for the attainment of physical and social wellbeing, the major point of the specification of first-order instrumental goals is that they allow one to trace processes of *substitution* or compensation. Substitution refers to the interchangeableness of resources, and first-order instrumental goals. For example, when an important affective relationship ends (for instance by the death of a close friend), one may try to compensate for the loss of affection by intensifying contact with another friend or a sibling (substitution of resources). For status, to take another example, one may substitute behavioural confirmation or affection: when it has become difficult to maintain one's status (for instance by losing one's job), one may attempt to make up for this loss by increased efforts to achieve behavioural confirmation and affection (substitution of instrumental goals).

The explanation of orientation towards living in an old age home is based on fundamental assumptions regarding goals, resources and substitution. Growing older implies a changing balance between gains and losses in resources, which encourage the ageing individual to compensate. When a person runs out of possibilities for substituting resources in order to maintain a minimum level of physical and social wellbeing, he or she is likely to become more and more concerned with the search for ways of avoiding a further breakdown of resources. The basic hypothesis on orientation towards living in an old age home is that the change from independent to protected living, constitutes an attempt to avoid the further loss of wellbeing. Orientation towards an

old age home will therefore originate during a *critical phase*, where even small additional losses of resources for wellbeing exhaust the possibilities for substitution.

In consequence, the crucial question relates to the nature of the major substitution processes that occur when a person grows older, and the limitations encountered in the possibilities of available substitutes. For the realisation of social wellbeing, the following changes are presupposed. After retirement, for many people the first instrumental goal likely to recede into the background, is status due to the loss of their own or their partner's occupational and social positions. Behavioural confirmation and affection will now become relatively more important instrumental goals for realising social wellbeing. But with increasing age, physical limitations will increase as well, and behavioural confirmation, which requires the ability to perform a great variety of roles, will become relatively more difficult to achieve. This leaves affection as the major instrument for social wellbeing for people of advanced age.

With regard to physical wellbeing, it is assumed that physical limitations also curtail the possibility for stimulation. For example, travelling becomes more difficult and some people can no longer leave the house. Comfort therefore becomes a more important way to achieve physical wellbeing as age increases. Thus the theory predicts that with increasing age, the goals which are relatively less dependent on work, roles and good health (*i.e.* comfort and affection) will be relied on increasingly for the realisation of wellbeing. In Figure 1 the hypothetical course of the life-span pattern of substitution is shown, together with the beginning of a critical phase, in which orientation towards living in an old age home will emerge. It is hypothesised that a person becomes more likely to consider an 'act' of safety seriously when in the critical phase, so as to avoid the irreplaceable losses of wellbeing. This act of safety is institutionalisation, which will be preceded by an increasing orientation towards it. This orientation therefore will increase considerably during the critical phase, as a function of the decreasing possibility of substituting other resources for comfort and affection.

To the degree that a person has sufficient resources to counter the threat of loss of comfort and affection, orientation towards living in an old age home will not come about. The ability to counter the loss of comfort and affection will depend to an important extent on resources. In the literature on the risk of institutionalisation, many of the risk factors identified can be traced back to (the lack of) such resources (*e.g.* Hanley *et al.* 1990). For instance, the ability to counter the loss of

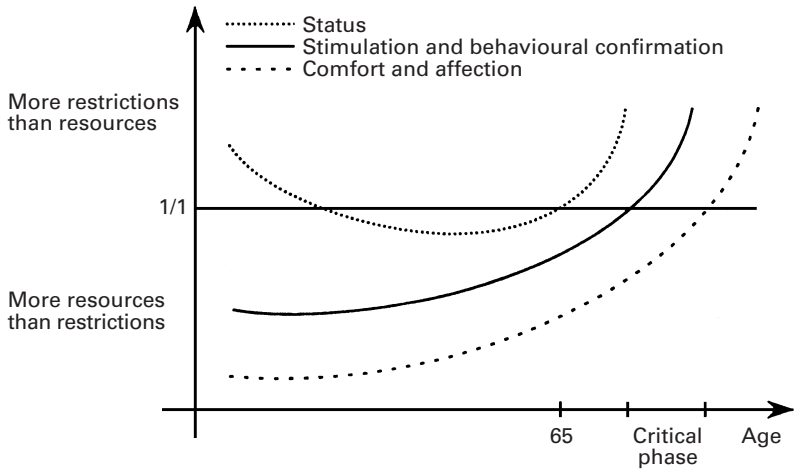

Figure 1. Hypothetical course of the relative difficulty of goal realisation for (i) status, (ii) stimulation and behavioural confirmation, and (iii) comfort and affection, across the life span (in a Western society) (Source: Steverink *et al.* 1998).

comfort will depend on resources such as income, private help, home adaptations, or informal and formal care. Having these resources will prevent the frail elderly person from considering an act of safety (*i.e.* from becoming orientated towards living in an old age home) as they enable one to counter the loss of comfort. Countering the loss of affection also depends on resources, but may be more difficult however, as it is hard to find new ways for achieving affective relationships after, for instance, having lost one's partner. In this respect, a spouse may be considered a special 'resource' (*i.e.* a multifunctional resource) for different instrumental goals at the same time, especially for both affection and comfort. Having a spouse, therefore, is hypothesised as constituting a deterrent to orientation towards living in an old age home, both directly, as the spouse provides affection, and indirectly, because the spouse may be an important informal caregiver to counter the loss of comfort (Freedman 1996; Freedman *et al.* 1994; Montgomery and Kosloski 1994). Furthermore, as the loss of affection is so hard to compensate since resources for affection cannot be bought (like some resources for comfort can), frail older people low in affection will consider living in an old age home even more strongly, for they may anticipate a gain in the size of their social network (and thus eventually in the means of obtaining affection) by living in such a home (see also Russell *et al.* 1997). It is therefore also expected that the effect of a lack of comfort on orientation towards an old age home will be stronger to the degree that the lack of affection is more severe. As the theory states

that orientation emerges especially from a threat to comfort and affection, and that resources may counter this threat and consequently deter orientation, it is hard to formulate hypotheses on age as well as on gender. Age and gender are usually considered important risk factors in institutionalisation, but neither are resources in themselves, although they may both be closely related to certain resources, such as health (related to age), and having a spouse (related to being male). No specific effects on orientation towards living in an old age home are therefore expected from age and gender.

The final expectation in the light of the theoretical model concerns the influence of members of the social network other than the spouse on orientation towards living in an old age home. Network members may function as resources in maintaining an independent way of life (Freedman 1996; Green and Ondrich 1990; Hanley *et al.* 1990), but they can also become impediments in this respect. When care giving becomes a burden (McFall and Miller 1992), network members may exert pressure on the elderly person to apply for a care facility. Such pressure is likely to reinforce the emergence of orientation towards living in an old age home, not just by impelling the change to such a home, but also by increasing an anticipation of loss of comfort and affection. The very fact that members of their social network advise them to apply, suggests to older people that future help (comfort) and affection from them are at risk. Such pressure from others, therefore, will lead to an increase in orientation towards living in an old age home.

The theoretical reconstruction of the determinants of orientation towards old age homes can be summarised in the following hypotheses:

(1) With increasing age, the maintenance of comfort and affection is more probable than that of status, behavioural confirmation and stimulation.
(2) Loss of comfort and affection will have a relatively stronger influence on orientation towards living in an old age home than the loss of stimulation, behavioural confirmation and status.
(3) The more that affection has already been lost, the stronger the influence of loss of comfort on orientation.
(4) Income, home adaptations, private help, informal and formal care will diminish the effect of loss of comfort on orientation.
(5) Having a spouse will have no independent effect on orientation when controlling for affection and informal care.
(6) No specific effects of age and gender on orientation are expected when controlling for comfort, resources to counter the loss of comfort and having a spouse.

(7) The stronger the pressure from others to apply, the stronger the orientation towards living in an old age home.

Method

Sampling

The data for this study come from the Groningen Longitudinal Aging Study (GLAS), which is being carried out in the Netherlands (Ormel *et al*. 1992). The data of the first wave used in this article, were collected in 1993. The respondents – frail elderly people – were recruited from the baseline sample of GLAS (N = 5279), which consisted of a representative group of non-institutionalised older persons age 57 and over, having no severe cognitive impairment as screened by the Mini-Mental State Examination (Folstein *et al*. 1975). The respondents were screened on frailty by the sub-scale Physical Functioning of the MOS Short-form General Health Survey (Stewart *et al*. 1988), with the criterion of impairments on at least three of six activities. A further selection was made on the basis of age – 65 being the formal lower-age criterion for admission to an old age home – and disability of the spouse. The latter implied that respondents whose spouses were more severely disabled than the respondent him or herself, were excluded in order to avoid contamination of both independent and dependent variables. In this way, 607 'frail elderly people' remained. The average age was 75.7 years (s.d. = 6.3); 9% were aged 85 or more; 75 per cent were female; 45 per cent were widowed and 45 per cent were married.

Measurement

Respondents were interviewed at home by trained interviewers. 'Orientation towards living in an old age home' was measured by a six-item scale, which was developed and tested in a pilot study (Steverink 1996). In order to avoid a mere attitudinal measure, both concrete behaviours and time preferences were taken as items for the scale. Concrete behaviours had to reflect a certain interest in moving to an old age home. There were three such items:

(1) How often do you think about moving to an old age home?
(2) How often do you talk with others about moving to such a home?
(3) Did you ever seek information about old age homes, or did you try to apply for admission to one?

The items with time preferences for an eventual move in the future were:

(4) Do you intend to move to an old age home within five years from now?
(5) Do you intend to move to such a home in the near future?
(6) Would you now accept a place in such a home when offered one?

All items were scored on a three-point scale. The first two items included the response categories 'never', 'sometimes' and 'often'; the response categories of the third item were 'no', 'I requested information' and 'I asked to be put on the waiting list'. The categories of the three time-items were 'no', 'perhaps', and 'yes'. Scale scores were computed by adding up the scores on all six items, which resulted in a continuum ranging from no orientation to a strong orientation towards living in an old age home. The scale showed good internal consistency (Cronbach's Alpha was .82; mean inter-item correlation was .43), and it proved to be a strong hierarchical Mokken-scale (Molenaar *et al.* 1994). A Mokken-scale is a probabilistic scale, reflecting the likelihood that a certain pattern of responses will emerge: the chance of a confirming answer increases to the extent that the concept measured by the scale is exemplified by the person in question. A Mokken scale-coefficient of .57 was found (values of .50 or more are indicative of a strong scale) and a Mokken reliability coefficient (Rho) of .83. More details regarding scale construction and psychometric properties are to be found elsewhere (Steverink 1996).

'Comfort' is defined by the theory of SPF as the satisfaction of basic needs such as food, drink and warmth, and the absence of physical needs or pain. As it can be assumed that basic needs are satisfied for the people in our sample, it was decided to focus the measurement of comfort on the absence of physical needs, *i.e.* on the ability to carry out daily household and personal self-care activities. For this the 18-item Groningen Activity Restriction Scale (GARS) was used. The scale has been widely used and has been shown to have good psychometric properties (Kempen *et al.* 1995).

'Affection' is defined by the theory of SPF as being loved as a person by others and oneself. Affection is what you get for what you are, not primarily for what you do. As such affection is primarily concerned with the emotional component of social interaction (Dugan and Kivett 1994). It was, therefore, measured by a scale assessing the perceived absence of close and affective social relations. This scale is also widely used and has proved to have good psychometric properties (Jong-Gierveld and Kamphuis 1985).

'Stimulation' refers to the pleasant range of physical or mental activation, and was measured by the number of stimulating activities reported (never, sometimes, weekly or daily). A total of 25 stimulating activities were distinguished: for instance, walking, reading, watching television, travelling, leisure activities. Only those activities engaged in weekly or daily were counted. Since the focus here is on activities that are in principle carried out voluntarily, overstimulation is rather unlikely. Thus, a greater variety of weekly or daily activities means having more stimulation.

'Behavioural confirmation' refers to doing things right, in the eyes of others and oneself. It refers to complying with social and personal expectations and norms, and feeling part of a social group. For the assessment of behavioural confirmation, the number of 18 possible social activities carried out weekly or daily were counted. Social activities, for instance, included visiting, telephoning and social leisure activities. As some activities can be classified as 'producing' stimulation as well as behavioural confirmation – which was the case for eight of the 25 and 18 activities respectively – both measures were found to correlate (.58). This is a rather high correlation, but it was still considered acceptable to use them separately in multiple regression analyses.

'Status' is defined in SPF theory as being recognised by others and oneself as being better than others in some relevant dimension. For this variable an occupational prestige-scale was used (Sixma and Ultee 1983), ranging theoretically from 0 (low prestige) to 100 (high prestige). Since the sample included many women who had never had a job, for them the data of the (male) spouse were taken if possible. This is a traditional point of view, but there are indications that the social status of the male spouse still discloses better results for married or widowed women in health research than other points of view (Dahl 1991).

'Income' was measured in a global way, by ten categories of net income, adjusted for household composition, in order to calculate the personal income of each respondent. The lowest category was under 1150 Dutch florins per month; the highest category was over 2350 Dutch florins per month. Of 54 (8.9 per cent) of the respondents the income was unknown.

'Home adaptations' were measured by 15 possible adaptations, such as the absence of thresholds, adaptations in the bathroom or toilet, special handrails, etc. All adaptations were added up. 'Private help' was measured by asking whether one had had paid private help during the last three months, which resulted in a dichotomous variable. 'Informal care' was measured by counting the number of daily

TABLE 1. *Means and standard deviations for all variables*

Variables (range)	Mean	s.d.
Age (65–93)	75.7	6.3
Orientation (0–12)	2.04	2.38
Comfort (18–70)	33.15	9.87
Stimulation (0–12)	5.31	1.97
Status (13–87)	42.43	18.98
Behav. confirmation (0–8)	3.00	1.64
Affection (0–11)	3.53	3.24
Income (1–6)	3.78	1.65
Home adaptations (0–11)	3.28	2.45
Private help (0–1)	.26	.44
Informal home care (0–13)	2.21	2.57
Formal home care (0–7)	.75	1.41
Pressure (0–4)	.30	.72

household and personal care activities with which one was helped by the spouse or other members of the network such as a daughter or son, neighbour or family member. 'Formal care' was measured by the same procedure, but then only the help of formal caregivers, such as professional home care workers, was considered.

'Pressure' to apply for an old age home was measured by two items, asking whether others say it would be better to move, and whether others urge application for an old age home. The two items correlated .62, and the internal consistency of this scale was .76 (Cronbach's alpha). It should be noted that this measure of pressure reflects the perception of pressure as perceived by the respondent, which does not necessarily overlap with the real pressure exerted by others. The descriptive values of all variables are shown in Table 1.

Analyses

The hypotheses were tested in separate models, using multiple regression analyses. The interaction effects were analysed by using centred scores, in order to avoid correlations between interaction and the main variables (Aiken and West 1991). In order to check for the risk of multicollinearity, the Pearson correlations of all relevant variables were inspected. It was found that the coefficients do not exceed $+.58$ or $-.30$, and this was considered acceptable. It should be noted here that the theoretical model and its hypotheses are formulated in terms of mechanisms and thus of causal relationships, which, in principle, cannot be tested with cross-sectional data. However, as the

analyses bear upon an initial test of theory-guided hypotheses, cross-sectional data can also yield important first insights, which may guide further longitudinal investigations. Nevertheless, the results of this study should be interpreted with some caution.

Results

First, the hypothesis on the age-related substitution hierarchy of the five first-order instrumental goals was tested. This stated that, with increasing age, the maintenance of comfort and affection is more probable than that of status, behavioural confirmation and stimulation. The results are given in Figure 2. The instrumental goal 'status' could not be included in this test, because this variable was measured by an occupational prestige scale, which cannot in principle, change after retirement.

First of all, it should be noted that the crucial substitution shift in instrumental goals away from behavioural confirmation and stimulation toward affection and comfort could not be tested directly because we only had cross-sectional data. Only a comparison of age groups, therefore, has been made. On the whole, however, it can be seen that the expected trend of an age-related change in the first-order instrumental goals is found: all decline with age, while over the whole range behavioural confirmation and stimulation decline faster than affection and comfort. Only in the highest age group (85+) is an unexpected deviation revealed: here the level of comfort is relatively lower than the levels of the other instrumental goals. An explanation for this finding may be that the measurement of comfort concentrated on the level of physical need, *i.e.* impairment in the ability to carry out daily household and self-care activities. This aspect of comfort may decline relatively faster at a very old age than the other aspects of comfort (*i.e.* fulfilment of basic needs, and absence of pain), which were not included in our measure of comfort. On the whole, however, the expected age-related trend is found. In the next analysis the second hypothesis was tested. The results are given in Table 2.

In this analysis it is primarily found that, as postulated in the second hypothesis, the loss of comfort and affection has a relatively stronger influence on orientation towards living in an old age home than the loss of stimulation, behavioural confirmation and status. As can be seen in Table 2, both the standardised regression coefficients (Beta) of comfort and affection are relatively greater than those of the other instrumental goals, a finding which is also reflected in the higher significance level

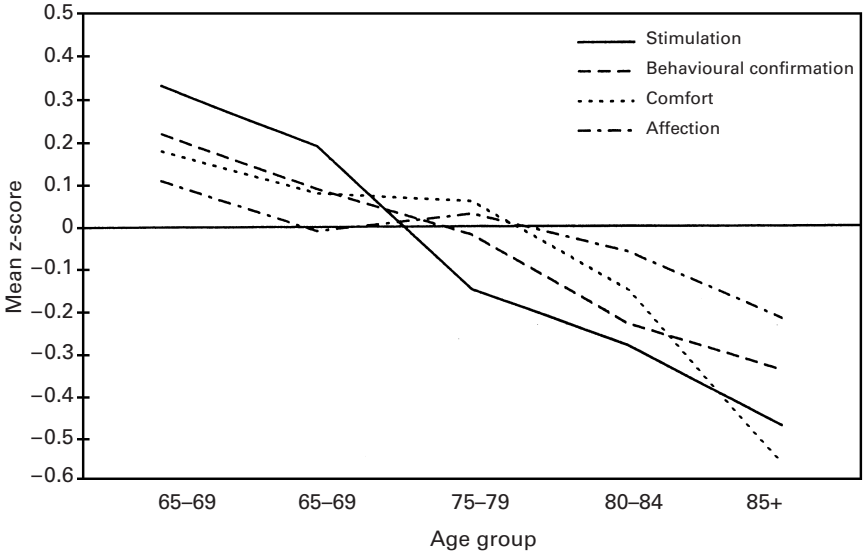

Figure 2. Mean z-scores on stimulation, behavioural confirmation, comfort and affection, by age-group.

TABLE 2. *Regression analysis of orientation (basic model)*

	B[a]	SE B	Beta
Stimulation	−.116*	.062	−.097
Comfort[b]	.032**	.010	.132
Status	−.008*	.005	−.067
Behavioural confirmation	−.006	.073	−.004
Affection[b]	.089**	.030	.122
Comfort and affection interaction	.007**	.003	.097
Constant	2.049**	.549	
R^2 (adjusted) = .07			

[a] **p < .01; *p < .05.
[b] a positive value represents an association between low comfort/affection and a positive orientation.

(p < .01) of these two compared with the others. Stimulation and status also have a significant influence on orientation towards living in an old age home, but this does not hold for behavioural confirmation. When elderly people have more stimulation, comfort, status and affection, they are less oriented towards an old age home. One explanation for the lack of an effect of behavioural confirmation could be its relatively high correlation with stimulation (r = .58), previously referred to. Nevertheless, as the explanation of orientation is assumed

TABLE 3. *Mean orientation by affection and comfort*

	Comfort high		Comfort low	
	mean	n	mean	n
Affection high	1.59	170	1.93	180
Affection low	1.86	102	2.73	151

to be found primarily in the loss of comfort and affection, as the two main determinants of the emergence of a critical phase, it may be concluded that the data do support the second hypothesis.

The third hypothesis implies a more detailed expectation concerning the combined effects of both comfort and affection. It was expected that the influence of the loss of comfort on orientation would be stronger the more that affection has already been lost. To test this hypothesis, first the expected interaction effect was included in the regression model, as shown in Table 2. A significant interaction between a lack of comfort and a lack of affection was indeed found: there is a combined influence on orientation towards living in an old age home. However, as the precise hypothesis was that the effect of comfort would be stronger the more affection had already been lost (and not the other way round), the interaction is further elucidated and tested in Table 3. Here the mean orientation scores of four groups, with high and low levels of both comfort and affection, are compared.

First of all, it is found that those low on comfort *and* low on affection have a significantly stronger orientation towards living in an old age home than the other three groups. The mean orientation of this group differs significantly from the mean orientation of each of the other three groups ($p < .05$: Tukey HSD test). However, the expectation was that those high on comfort and low on affection would have a stronger orientation than those high on affection but low on comfort: a lack of affection would make living in an old age home relatively more 'attractive' than a lack of comfort. This is because it was expected that resources to counter the loss of affection are relatively harder to obtain than resources to counter the loss of comfort. But this effect was not found: the mean orientation of the two groups does not differ significantly. It must be concluded that, although the combined effects of a lack of comfort and a lack of affection are a significant influence on orientation, the expected greater influence of affection is not found.

The fourth hypothesis stated that resources that allow for the compensation of the loss of comfort would diminish the effect of loss of

TABLE 4. *Regression analysis of orientation (resources to compensate the loss of comfort)*

	B[a]	SE B	Beta
Stimulation	−.014	.062	−.013
Comfort	.075**	.019	.297
Status	−.000	.006	−.005
Behavioural confirmation	−.067	.077	−.046
Affection	.078*	.035	.104
Income	−.237**	.074	−.160
Home adaptations	−.051	.047	−.052
Private help	−.046	.278	−.008
Interactions			
Comfort and income	−.010	.007	−.068
Comfort and home adaptations	−.005	.005	−.056
Comfort and private help	.013	.028	.023
Informal home care	−.125*	.073	−.133
Formal home care	−.290**	.120	−.174
Interactions			
Comfort and informal care	−.002	.004	−.036
Comfort and formal care	.017#	.007	.138
Constant	2.423**	.464	
R^2 (adjusted) = .09			

[a] **p < .01; *p < .05; #p < .03 (2-tailed).

comfort on orientation. Two sets of resources are considered here: the first set includes income, home adaptations, and private help; the second, informal and formal home care. The results are given in Table 4.

In the regression model presented in Table 4, the main variables of the basic model (the five first-order instrumental goals) are considered again, alongside the two sets of resources and their interactions with comfort. The results of this test primarily show that both a lack of comfort and a lack of affection still have a significant independent influence on orientation, as was found in the first model. Furthermore, it is found that of the first set of resources, only income has a direct significantly negative influence on orientation. The higher one's income, the less oriented one is towards living in an old age home. Home adaptations and private help do not significantly relate to the level of orientation. Contrary to expectation, however, income is not found to delay orientation by compensating for the loss of comfort. Thus, older persons with a higher income are less oriented towards old age homes, but those low in comfort are not less oriented on account of having a high income.

No interaction effects with comfort were found for home adaptations and private help. Although these resources may be assumed to be

helpful when there is a certain loss of comfort, they are not found to counter the loss of comfort to an extent which deters orientation towards living in an old age home.

The second set of resources which possibly counter the loss of comfort consist of informal and formal home care. The results on these resources are also found in Table 4. Both have a direct negative influence on orientation: the more informal and formal home care a frail elderly person has, the less he or she is oriented towards living in an old age home. However, when these resources are considered in interaction with comfort, some strange effects become apparent. The coefficient of the interaction between informal home care and comfort is no longer significant, which means that informal home care does not function as a resource to counter the loss of comfort in such a way as to deter orientation. Formal home care, on the other hand, also shows an unexpected effect in this regard. In interaction with comfort, formal home care seems to strengthen rather than to deter orientation towards an old age home. Frail elderly people, low in comfort, do use formal home care, but they are at the same time strongly oriented towards living in an old age home. It must be concluded that formal home care does not deter orientation by countering the loss of comfort. Instead, it seems to strengthen the orientation towards an old age home when the recipients are low in comfort. Both unexpected effects of informal and formal home care will be further elaborated in the discussion.

The final set of analyses concerns the tests of hypotheses 5, 6, and 7. The results of all three tests are given in Table 5, in which two regression models are presented. In the first model the results of the test of hypotheses 5 and 6 are shown. The second model contains the results of the test of hypothesis 7.

In both models the variables of the basic model (the five first-order instrumental goals) are dealt with once more, as well as the variables which were found to have significant influences on orientation in the earlier models. All influences are considered simultaneously, in order to control for each one independently. In the first model, the independent influences of having a spouse, age and gender are considered. In the first place, 'having a spouse' does relate to orientation in the expected direction, but is, in fact, not significant. More specifically, as expected, no significant effect of having a spouse is found when controlling for affection and informal care. A substantive part of both affection and informal care seem to be provided by the spouse, as expected. However, what is also interesting, is that when a spouse is present, the effect of informal care loses significance, whilst the significant effect of affection remains. This finding indicates that lack of affection is essentially a

TABLE 5. *Regression analysis of orientation (two models)*

	Model 1			Model 2		
	B[a]	SE B	Beta	B[a]	SE B	Beta
Stimulation	−.003	.062	−.003	.018	.055	.017
Comfort	.055**	.018	.217	.045**	.016	.177
Status	−.002	.006	−.015	.000	.005	.004
Behavioural confirmation	−.073	.076	−.051	−.073	.067	−.051
Affection	.082**	.034	.111	.037	.031	.050
Interaction						
Comfort and affection	.006*	.004	.074	.004	.003	.045
Income	−.206**	.075	−.140	−.184**	.066	−.125
Informal home care	−.027	.078	−.029	−.051	.069	−.055
Formal home care	−.299**	.109	−.179	−.245**	.097	−.147
Interactions						
Comfort and income	−.007	.006	−.045	−.004	.006	−.026
Comfort and informal home care	−.005	.003	−.081	−.002	.003	−.035
Comfort and formal home care	.015#	.007	.123	.013#	.006	.109
Spouse	−.070	.291	−.014	−.088	.259	−.018
Age	.035*	.019	.088	.012	.017	.031
Gender	.527*	.258	.095	.259	.230	.046
Pressure				1.483**	.129	.451
Constant	−1.124	1.681		.313	1.497	
R^2 (adjusted)	.10			.29		

[a] **p < .01; *p < .05; #p < .04 (2-tailed).

more important determinant of orientation than the mere facts of having a spouse and having informal care. With respect to age and gender – also considered in the first model of Table 5 – it is found that both have significant influence on orientation independently, which was not expected. Both being older and being female relate positively and significantly to a stronger orientation towards living in an old age home, even when controlling for comfort, resources to counter the loss of comfort, and the presence of a spouse. It may be concluded that age and gender do have a certain influence on the level of orientation towards an old age home.

Finally, in the second model in Table 5, the results of the test of hypothesis 7 are shown. In this model the influence of pressure by others on orientation is considered and the expected aggravating effect of such pressure to apply for an old age home is found. This effect is considerable, according to the amount of explained variance, which increases by 19 per cent. What is further intriguing is that the influence of affection disappears, as does the influence of the interaction of comfort and affection, as well as the influence of age and gender. The fact that the influence of affection disappears is an indication that – as expected – pressure of others to apply is accompanied by a perceived

lack of affection. This finding will also be elaborated on in the discussion.

Discussion

The aims of this study were threefold. First, as the different levels of care given in different facilities may yield different predictors of use, this study focused specifically on the need for old age homes (and not on nursing homes, which in the Netherlands are used exclusively by physically and mentally ill persons who need special medical and nursing care). Second, as there is a serious lack of theory in the field of research on the need for and use of care facilities among frail elderly people, a deeper insight in the underlying mechanisms of this phenomenon was sought, by the construction of a theoretical model and the empirical testing of its hypotheses. Third, existing studies usually only focus on use or demand as the main phenomenon to be explained. However, indications were found that these variables are contaminated, which may hamper the understanding of the mechanisms underlying the need for care facilities by frail elderly persons. In order to meet these objections, it was decided to focus on 'orientation towards living in an old home' as the dependent variable. A scale was developed, measuring the extent to which frail elderly people themselves express a need for living in such a home. As this question will only be relevant for those who are already at a certain level of frailty, the study focuses on frail elderly persons.

The findings reveal that the theoretical model has been supported to a substantial extent, although not all hypotheses were confirmed by the data. Nevertheless, it is possible to assess the hypothesised basic age-related hierarchy and substitution of instrumental goals empirically. The marked findings on both comfort and affection, as well as their combined effect, also point to the hypothesised existence of a critical phase, in which orientation towards living in an old age home emerges and increases. These findings lend support to the fundamental assumptions regarding the circumstances under which frail elderly people will develop an orientation towards living in an old age home. However, the hypotheses concerning the effects of resources to counter the loss of comfort in order to deter orientation were only partly confirmed. Income has a significant main effect on orientation, but not the expected effect that it would counter the loss of comfort and as such deter orientation towards living in an old age home. An explanation for this finding may be that wealthy people do not consider

institutionalisation at all as, at the time that this study was conducted (1993), they had to pay for it themselves. Adaptations in the home and private help were found to affect orientation neither directly nor in interaction with comfort. An explanation for this may be that adapted housing is rather common for older people in the Netherlands, regardless of the specific level of their need. The same holds for private help, which is found among wealthy people as a luxury, not primarily as a means to counter the consequences of need. These resources seem therefore to be of minor importance in the explanation of orientation towards an old age home.

The results regarding informal and formal home care are intriguing and need some further thought. Although both reveal significant direct effects on orientation, they were not found to deter it by countering the effect of a loss of comfort. The precise role played by informal care remains unclear; for formal care the question remains as to how the unexpected positive effect on orientation in interaction with comfort is to be explained. Informal care does not seem to diminish the effect of comfort on orientation, whilst formal care even strengthens this effect. Although both findings run contrary to expectation, other studies have had comparable results (Jette *et al.* 1995; Newman *et al.* 1990). If we try to explain these effects post hoc by the proposed theoretical model, the crucial mechanism should be linked to the instrumental goal, affection. Most elderly people using formal home care will be low in both comfort and affection, as is reflected in the fact that they live alone and have no spouse, or informal care. People who are low in both comfort and affection will therefore use formal home care, but will at the same time consider living in an old age home, because formal home care is not equipped to provide affection, although it does indeed provide comfort. In consequence, formal home care is not found to delay, but rather to increase the orientation towards living in an old age home. It was indeed found (but not shown) that people who are low in comfort and have only formal home care, disclose a relatively low level of affection compared with those who are low in comfort and have only informal care (mean lack of affection was 6.23 and 2.79 respectively). The absence of an interaction effect of informal care and comfort on orientation may be explained by the same mechanism of affection. Two effects may cancel each other out. On the one hand, there are caregivers (especially spouses) who provide both comfort and affection; on the other hand, there are other caregivers who feel burdened and may withhold affection. Caregivers who begin to urge an elderly person to apply for an old age home are likely to be signalling a decline of affection towards the care receiver.

The findings on having a spouse, which has no influence on orientation when controlling for affection and informal care, may also be considered supportive of the theoretical model, but the findings on age and gender pose some new questions. The theoretical model emphasises the meaning of resources for important goals (here especially comfort and affection), which makes age and gender difficult to fit into the model. Age and gender can be considered as global indicators of certain resources and constraints rather than as important influences in themselves. Both, however, were found to have independent influence on orientation, controlling for resources. Still other mechanisms may therefore be at work concerning these variables. Old age, for example, may have an additional effect on anticipation of the loss of comfort and affection, thus causing people to reach the critical phase even faster the older they become. The 'act of safety' (moving to an old age home) becomes ever more urgent when the time horizon shrinks and resources become increasingly uncertain. With respect to the findings on gender, it may be the case that women's expectations regarding old age homes may be less negative than men's, causing them to apply relatively more easily for such a care facility than men. Further research is needed to clarify these findings.

Regarding the objectives of this study, the following conclusions may be drawn. First, the empirical results, although not perfect, are considered good enough to work on within the theoretical framework as presented here. The main component of the model to explain orientation is believed to be the existence of a critical phase, in which possibilities for substitution of resources are exhausted and especially those for affection and comfort. The latter are indeed found to be two of the main predictors of the level of orientation towards living in an old age home. Although only some of the main components of the theoretical model could be presented and tested here, it is believed to constitute a potential contribution to theory-building in this field. Second, the concept of 'orientation towards living in an old age home' was formulated in order to gain a clear understanding of the real need for living in an old age home (*i.e.* the dependent variable), instead of 'use' or 'demand' as the variables to explain. Although a psychometrically sound scale could be developed, and a number of findings support the assumptions concerning the concept of orientation, the behavioural implications of orientation with respect to later actual use of an old age home could not yet be tested. Such testing is necessary in order to determine whether a strong orientation is indeed predictive of the use of an old age home later on.

Further research is also necessary on other points. First, the

theoretical model constructs the *causal* mechanisms of the origin of orientation, but cross-sectional data can only deal with static relationships. This model needs further testing with longitudinal data. Second, although the aim was not to explain as much variance as possible, but to test a number of hypotheses, the small amount of explained variance impels us to elaborate on some possible causes. One rather plausible explanation lies in the somewhat skewed measure of orientation, which is common to hierarchical scales (Cox and Wermuth 1992). A revised, less skewed version of the scale could possibly be developed, in order to avoid this problem. It cannot however be ignored that other factors, which were not considered in this study, may in fact play a role in the emergence of orientation. Further research should examine in more detail the factors that may play a part in the processes of substitution and compensation. The role of caregivers or relatives should also be elaborated in much more detail.

Some implications of this research for policy may be considered. One overall recommendation would be that preventing the 'critical phase' from occurring seems essential for discouraging the use of old age homes. The two most important determinants of the critical phase seem to be problems related to the realisation of both comfort and affection. How can these insights be used for policy planning? First, it should be recognised that many policy measures aim to discourage the use of care facilities, by augmenting informal and formal home care. At the same time, however, questions arise as to the continuity and stability of family care (Tennstedt *et al.* 1993) while formal home care is increasingly concerned with the material efficiency of its products. As this study suggests, policy measures that concentrate only, and ever more efficiently, on the physical side of home care (*i.e.* on comfort) will only work adequately when the recipients still receive a considerable amount of affection. Mere physical care does not seem to delay orientation towards living in an old age home if the person in question does not also receive at least a modicum of affection. Formal home care therefore will not keep the frail person who is low in affection at home. However, it is much more difficult to provide affection by policy measures than providing resources for comfort. A solution to this problem therefore may lie in special co-operation and co-ordination of informal and formal home care (Cantor 1991). The special task of informal care would be primarily the provision of affection, the special task of formal home care the provision of comfort. Formal care can thus be supportive for informal caregivers and protect their task of providing affection, so avoiding a situation in which they become overburdened, withdraw affection, and begin to exert pressure on the older person to

apply for an old age home. If it becomes a generally accepted insight that care for frail elderly people should address both comfort and affection, it may become possible to prevent them from reaching a critical phase and to delay or avoid institutionalisation in old age homes altogether.

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